

SECTION II—CLAIMS

1.-30. (Canceled)

31. (Currently Amended) An evaporator, comprising

a base in configured to be thermally coupled to a semiconductor heat source, the base including a cavity defined by a bottom and a peripheral portion around the perimeter of the bottom;

a top cover secured to the peripheral portion of the base so as to define a sealed volume in which a working fluid is vaporized;

a liquid inlet port to receive the working fluid in a liquid state, operatively coupled to the sealed volume;

a vapor outlet port from which the working fluid exits the evaporator in a vapor state, operatively coupled to the sealed volume;

a plurality of structural elements integrally formed in the bottom or the top cover, wherein the plurality of structural elements prevent the sealed volume from collapsing when the evaporator is operated such that evaporation of the working fluid occurs under sub-atmospheric conditions; and

a wicking structure, disposed within a portion of the cavity, having a top surface on which a meniscus of the working fluid is formed and a bottom surface into which the working fluid is drawn through a capillary mechanism and a pressure differential between a pressure of the working fluid in the meniscus and a pressure of vaporized working fluid in the sealed volume.

32. (Canceled)

33. (Previously Presented) The evaporator of claim 31, wherein the wicking structure comprises a volume of a sintered material.
34. (Previously Presented) The evaporator of claim 33, wherein the sintered material comprises a sintered copper.
35. (Previously Presented) The evaporator of claim 31, wherein each of the base and the top cover comprise stamped metal components.
36. (Currently Amended) The evaporator of claim 31 wherein when the plurality of structural elements are integrally formed in the bottom they extend between the bottom and the top cover.
37. (Previously Presented) The evaporator of claim 36 wherein the wicking structure includes holes therein to accommodate the plurality of structural elements extending between the bottom and the top cover.
38. (Currently Amended) The evaporator of claim 31 wherein when the plurality of structural elements are integrally formed in the top cover they extend between the top cover and the wicking structure.